

## ABSTRACT

A network monitoring system for monitoring network performance across heterogeneous networks with an end device is disclosed. The network monitoring system includes a network comprising a first heterogeneous network communicatively coupled with a second heterogeneous network. The first heterogeneous network may include the end device, an intermediate node and a gateway. The second heterogeneous network may include an application server. The end device and the application server may communicate over the network with a datastream. The end device may generate a tracer packet as part of the datastream. The datastream may travel through the intermediate node. The intermediate node may store network service information in the tracer packet. The gateway may operate as an interface to the second heterogeneous network. The gateway may intercept the tracer packet and store network condition information therein. In addition, the gateway may redirect the tracer packet back to the end device over the first heterogeneous network. The end device may process the information contained in the tracer packet to determine current network and application server operating conditions, and provide results of the processing to a user of the end device.